Topic: Plain talk review of April 30, 2010 strategy document

Lead: Karen Dinicola

No content changes suggested. Overall problems and some suggestions to reduce confusion and make the document more accessible to readers:

1. Hard to absorb content of document as currently organized.
    a. Need intro material before key recommendations: why this matters
    b. Suggest having sections for S&T, source ID, effectiveness rather than "vol 1" and "vol 2" and also moving a lot of details to the appendices. Can't tell what's new vs. redundant in appendices.
    c. Lots of "talk" that can be moved to appendix as background and context
    d. Move regional program recommendations to end of key recommendations
    e. Add an acronyms and definitions section

    Proposed change: Reorganize the document as suggested, and specifically:
    Add intro before key recommendations (using mostly current intro text)
    Move many sections to appendices; be more succinct in main document
2. Create an acronym for the regional stormwater monitoring and assessment program (RSMAP) and use it throughout.

Topic: Cost and Pay-In Option

Lead: Jim Simmonds

1. COSTS:
    a. Overall cost is too high, and it is unclear how municipalities will pay for this, especially given existing economy (mostly from municipalities).
    FAQ?: The costs presented at the workshop represent planning level, 5-year estimates. The proposed solution is to refine the costs, and also to develop estimates of current monitoring costs for comparison, and to include this information in the report. Also acknowledge that raising SWM fees to cover increased monitoring costs will not be popular among elected officials in these economic conditions, and strive to keep costs as low as possible while still attaining our objectives. Acknowledge concern about existing programs and staff, but recommend the coordinated solution.
    b. Concern about increased cost in addition to existing monitoring costs – will layoffs occur? Will existing monitoring programs be cut?
    New Key Recommendation: The new monitoring program should be conducted using existing capacities. (This would minimize the need for layoffs due to loss or shifting of monitoring work.)
    c. Instead of raising funds for monitoring, money better spent providing services and implementing fixes/controls
    FAQ?: The SWG disagrees with this comment. We believe monitoring is already occurring, albeit in an uncoordinated and inefficient manner. The recommended program is similar in costs to existing monitoring programs, but will result in substantially more useful and useable data and in improvements in stormwater management.

2. FUNDING ALLOCATION: Lack of specificity allocating costs between feds/state/municipalities – some activities should be funded by each. Need reasonable cost-sharing approach between municipalities
   New Key Recommendation: Monitoring costs should be evenly split between federal, state, and local governments.
   New Key Recommendation: Costs should be allocated among jurisdictions based on population and assessed value. (Similar to WRIA 8 cost-share model.)

3. PAY-IN OPTION: General (but not universal) support for pay-in option. Many issues remain:
   a. Possible conflict of interest
      New Key Recommendation: The oversight and selection of studies and contractors will be conducted by a board with broad representation, not by the independent administrative entity.
   b. Requirement to pay-in vs. flexibility to choose
      Discussion: This is a difficult issue. Some aspects of the regional program clearly benefit everybody (e.g., data management), but how rigidly do we recommend that every permittee contribute to these aspects? Our draft report recommends (not a Key Recommendation, but on page 60, lines 1-4) that every permittee be required to contribute to sustain infrastructure for contract oversight, data management, and synthesis activities. *Options:*
      i. Drop this language, and instead opt for complete flexibility by all permittees to choose to either pay-in or conduct their own monitoring. **OR**
      ii. Add *New Key Recommendation*: A small fee may be required of all permittees.
   c. Increased overhead for independent entity is unnecessary
      FAQ?: Every organization has overhead, and it might seem at first counterintuitive to recommend creating a new organization with the accompanying costs. However, there is currently no organization dedicated to conducting a coordinated monitoring program as recommended by the SWG, and there doesn't appear to be an existing organization capable of assuming this role. Thus, creating or utilizing a new structure is the most logical approach, even with new overhead costs factored in.
   d. Who provides oversight?
      FAQ?: We don't yet know who will do this, but we recommend SWG have an advisory/oversight role. The new independent administrative entity will need to have some sort of oversight board and decision-making process to ensure that all contractual decisions and project selection/funding decisions are made fairly and objectively.
      Add *new Key Recommendation #8d*: The independent fund will be overseen by a multi-stakeholder board that ensures that that all contractual decisions and project selection/funding decisions are made fairly and objectively. The SWG proposes to task a subgroup work on this over the summer and come back with a solution in September.
   e. Funding of monitoring outside of jurisdiction (it is unclear whether funds from municipalities can be used for activities outside jurisdictional boundaries). Also, need for actual benefits to be received by every municipality contributing funds to the pay-in option, with a focus on actual monitoring within each municipality's boundaries.
      FAQ?/Editorial: Describe the benefits within the report, and ask for legal advice about the need for actual monitoring within each municipality's boundaries.
   f. More accounting and legal are detail needed for pay-in option: SCCWRP as model?
      New Key Recommendation: SWG will task a subgroup work on this over the summer and come back with a solution in September.

Topic: Other/General Comments on the Strategy

Lead: Tom Putnam

1. Page 1, recommend inserting a new paragraph, under Key Recommendations, that states up front that while the intent of this effort is to develop a comprehensive stormwater monitoring strategy for the region, our initial focus, and this report, is largely focused on municipal stormwater.
   Change Key Recommendation: Editorial. Make this clearer in KRs 1 and 2.
2. Key recommendation #5d: Recommend changing "advising" the regional stormwater control strategy to "informing". The SWG does not have an advisory role to developing the strategy; rather, its role is to monitor and gain new information that will inform the regional strategy
   Change Key Recommendation: Editorial. Change "advising" to "informing"
3. Key recommendation #6: This will have to be edited to reflect current progress as of June 30.
   Change Key Recommendation: Agree. Editorial.
4. Key recommendations #10 – 16 lack a responsible party. Who is charged with these tasks?
   Discussion: The SWG will do some of these, and the ecosystem monitoring program will do others, and state agencies or other entities still others. How should we proceed with making these assignments?
5. Key Recommendation 11 suggests an analysis of recent and ongoing stormwater-related studies and findings. To ensure credible and comparable data are included in this analysis, studies used in this evaluation should follow a standard set of field collection, data analysis, and reporting protocols. Unfortunately, a regional set of standard operating procedures has not yet been established. How will those conducting this analysis know that studies are credible and comparable? [p. 2, lines 27-29]
   Change Key Recommendation: Editorial. Note that we will resolve standards as program evolves
6. Key Recommendation 12 describes the need to formulate and support a process to develop and approve standard methods. Key Recommendation 14 requires monitoring follow all applicable regional protocols. The current Standard Operating Procedures and Quality Assurance Project Plan Standardization Project (SOP work group) has developed four standard operating procedures (SOPs). Many more are needed, but funding to continue SOP development is in doubt…A clear strategy to fund and support SOP development is needed. Is there another source of funding to support this effort in the near term? [p. 2, line 35 and p. 3, lines 5 and 6]-
   Change Key Recommendation: Editorial. We need to articulate a clear strategy to fund and support SOP development.
7. Key recommendation #13, we recommend the SWG discuss further, or create a sub-group to discuss, issues related to and options for data management (where to house, who would analyze, etc). Consider the Partnership or Ecology as the lead entity for creating the IT infrastructure needed to compile and provide access to the data
   Change Key Recommendation: Designate Ecology and/or PSP as the lead entity for this task.
8. Key Recommendation #14: Requiring "all data and findings to be submitted to a central data management system" may be problematic… The SWG should consider creating a much simpler portal… Building a portal could occur much more quickly and would allow individual data users to hook into the region-wide system at their own pace. The "independent entity" should be designed so that it is well suited as a repository for Municipal Stormwater Permit and other stormwater data. However, it should be recognized that there are some types of Permit-related data that are best collected and analyzed by local permittees

Change Key Recommendation: Clarify that this is our intent (by "system" we mean the collection of common data bases that house the information and are accessible by the portal)

9. OVERSIGHT ROLES: Roles of SWG, Independent Entity, Ecosystem Monitoring Program, PSP, Ecology need to be specified and/or clarified. It will be very important for stakeholders to have a role in oversight of the Entity, particularly with respect to lending practical stormwater management experience to potentially academic endeavors. SWG may not be the right organization, structure, or group to continue on with regional program *implementation*. It seems more appropriate than an independent monitoring and analysis entity (i.e. the SCCWRP model) be created to coordinate stormwater monitoring and broader efforts. Perhaps a "board of directors" or "advisory group" made up of jurisdictional, private, and regulatory representative is a better role for the current SWG representation? We encourage an ongoing role of the SWG related to defining, implementing, and directing stormwater monitoring and assessment; We recommend that the SWG (or a similar representative body) serve as the oversight body for the monitoring program implemented by the independent entity.
FAQ?/Editorial: These comments are aligned with our recommendations. Clarify. Perhaps discuss how coordination role is envisioned.

10. NPDES-related:

a. Will the regional program be 100% compliant or will locals have to monitor further?
b. Beyond purview of NPDES permits: LEGALITY: Pages 58-60. Many municipalities have raised concerns that they are not sure about whether they can legally be required to use MS4 ratepayer funds for science not directly related to managing stormwater, or that benefits other jurisdictions.
c. Page 2, line 17. Page 60 lines 12-17; Appendices p. 76 line 38. Some of the proposed status and trends monitoring components could require more than a five year permit term to generate significant trends and lead to related follow up actions. Process too protracted for permitting purposes. Longer term monitoring could be better conducted by the Entity operating outside of the NPDES permits under necessarily longer term planning and budget cycles.
d. What to do to monitor non-NPDES coverage areas?

FAQ?/Editorial: No change to recommendations. Clarify these issues to the extent possible; at the least, they should be recognized in the document.

11. GOVERNANCE**:** Use Interlocal Agreements Page 65, line 22. MS4 Permittees should be able to use interlocal agreements to achieve economies of scale, to share resources and expertise, and to address watershed interests in performing their stormwater monitoring tasks. Through interlocal agreements, smaller Phase II Permittees and secondary Permittees could take advantage of the efforts and expertise of larger, more established stormwater management programs.
RECOMMENDATION: Use Interlocal agreements if possible; perhaps develop a model agreement

12. ROLES FOR ENTITY:

a. assess the larger scale condition status, perform large scale trend analyses and undertake research efforts necessary to forward the state of the art.
b. address data needs in managing stormwater for rural, agricultural and forest lands which may be different from data needs for managing urban stormwater.

c. Ecology should have the responsibility for contracting with the Entity for the required services

d. Page 59-60. We recommend that careful consideration needs to occur when deciding the functions of the "entity." One concern is having the same entity operate as the coordinator/clearing house for the studies and funding and also conducting/competing for the funding to conduct the studies. This can raise serious issues around conflict of interest. We believe that it is possible to address this concern with proper structure and oversight by the SWG in selecting studies to fund

Add to new Key Recommendation: Include these ideas for consideration by subgroup this summer. Develop to maximum extent by June and October deadlines.

13. ROLES OF STATE AND FEDS: Page 60, Section 2.1.4. We recommend that the role of the ongoing state and federal monitoring programs be better described relative to the level of effort intended, and the relationship to stormwater monitoring and assessment

Discuss: How can we improve this aspect of our recommendations? Over what timeline?

14. SWG should identify what a prioritized, scaled-back option for status and trends monitoring in case funding is problematic.

Discuss After S&T Topic: Is it too late, or is this feasible?

15. SEQUENCING: Due to the extensive need for coordination and synthesis of data at a regional level associated with the status and trends monitoring, the formation/identification of an independent monitoring institution is essential for successful implementation and to achieve meaningful results. Until institution identified and supported, status and trends monitoring should not be undertaken.

Discuss after S&T comments.

16. Underdevelopment of Source ID and Effectiveness compared to S&T: The strategy appears to place a majority of emphasis on Status and Trends relative to Source Identification and Diagnostic and Program Effectiveness efforts. This seems disproportionate given that the latter two have a stronger tie to the stormwater management adaptive management framework.

FAQ/Editorial: Recognize relative underdevelopment and describe work to beef up over summer

17. Data Management; Standards etc: Hypothesis testing is important and a robust scientific design is a must. We believe that Ecology or some other technical resource needs to provide a consulting service to help in this respect or it will not happen.

Editorial: Recognize possible need for consulting service

18. Modeling: More details on how modeling can and will be utilized needs to be included in this proposal. Modeling can save resources in many cases, but only if it is integrated into the monitoring program up front

Editorial: See if more detail is available; if not, recognize more is needed.

Topic: Status and Trends Monitoring

Lead: Jonathan Frodge

Strategic Priorities and Overall Framework

KR 2). The initial starting point for this regional stormwater monitoring and assessment program is focused on stormwater-related impacts to small streams and marine nearshore areas. Robust, fully-

scoped monitoring and assessment programs for other water bodies should be cooperatively developed as specific priority questions are identified.

Proposed addition: This program operates under the assumption that stormwater is the main stressor for biological endpoints. Confounding stressors such as climate change, industrial discharges, etc. will be evaluated as data and analyses become available.

Scientific Framework for Small Stream Status-and-Trends Monitoring

Proposed addition: The proposed samples size, allocation of samples, specific locations and the temporal aspects of the experimental need to be defined relative to the specific parameters of concern. A technical committee should be established to refine these aspects of the experimental design.

18) Experimental design for small streams:

a. Probabilistic sampling of randomly selected sites to assess chemical, physical, and biological status and trends over time.
b. Approach is compatible with Ecology's statewide status-and-trend monitoring program (State EMAP) methodology for wadeable streams.
c. At the Puget Sound scale: use the existing 30 State EMAP sites located in Puget Sound and/or historical water quality monitoring sites that meet statistical considerations, collect samples for the current State EMAP parameters, and also collect:
    i. Grab samples for sediment toxic chemicals, and
    ii. Water quality samples.

Proposed addition: Define a trend monitoring program utilizing existing long-term sampling locations as an interim program for trend analysis. Conduct analysis to estimate the bias introduced by using the existing non-random sites.

d. At a minimum of thirteen stations across Puget Sound, also monitor continuous flow and temperature at existing (non-random) stream gauging stations identified in the final study design.

Proposed addition: define the statistical basis for selecting a minimum number of thirteen

e. Within the first year, identify relevant existing data that could further refine the final sampling frequency and design.

19. Identification of small stream sites:

a. Target second- and third-order "wadeable" streams that are more directly (but not exclusively) affected by stormwater,
b. Identify 30 sites at the Puget Sound scale for trend assessment
    i. Use sites selected for State EMAP, and
    ii. To the extent possible without compromising the probabilistic design, existing long-term monitoring sites should be included and used.
c. Focus on the watershed scale using a probabilistic site-selection approach that can be more densely focused within urban growth areas if appropriate,

d. Add sites to total 30 within each of the thirteen local salmon recovery areas in Puget Sound (Water Resource Inventory Areas (WRIAs) and combinations of WRIAs), for a total of 390 sites.
e. Island-based watersheds would not be included in this component of the monitoring program due to the limited number of wadeable streams.

Proposed Addition: b. define the statistical rational for selecting 30/WRIA and state the assumptions that were used (i.e. assumption of equal variance, etc. for the proposed equal allocation of sampling effort across WRIAs. D. provide the number of second and third order stream miles in the island counties that was used as the basis for excluding these counties.

20. Small stream monitoring frequency:
    a. At the regional scale: Follow State EMAP protocols, and conduct:
        i. Annual sediment chemistry sampling at the 30 State EMAP sites,
        ii. Monthly water quality sampling at the 30 State EMAP sites, and
        iii. Continuous measurements at the 13 flow and temperature stations.

Proposed addition: state that the sampling frequency is based on EMAP protocols and not on a temporal scale associated with the evaluation of stormwater (wet/dry weather stratification, targeted storm sampling, flow weighted composites, etc.

    b. At the WRIA scale: Consider, as a target: Ramp-up and conduct two rounds of wadeable stream status-and-trends sampling within a five year cycle from 2012 to 2017 to match the municipal stormwater NPDES permit cycle (begins in 2012), and allow sufficient time for analyses to refine the monitoring program design and inform the following five-year cycle of permits and other efforts.

Proposed Addition: define the statistical rational and pros and cons for selecting two out of five years

Implementation Plan for Small Stream Status-and-Trends Monitoring

22. Local governments will help coordinate sampling among the WRIA groups and other entities involved in conducting monitoring of stream benthos, fish, habitat, water quality, and other parameters to avoid duplication of field efforts and achieve cost savings. Sampling is conducted by NPDES permittees, Ecology, and others. Within the first year, identify other opportunities for collaboration.

23. Salmon recovery entities, Ecology, the Partnership, and others will coordinate with local governments to fund and conduct two rounds in a five-year period of fish diversity and abundance monitoring and physical feature monitoring.

25. The SWG will compile information within the next year on current streamflow gauging stations in Puget Sound, analyze current regional streamflow monitoring capacity, and develop a regional network of stream gauges associated to the greatest extent possible with the water quality and habitat monitoring sites.

Proposed addition: state how this is in compliance with the proposal for selecting and analyzing a 'minimum of 13 sites'.

26. Local governments in Puget Sound covered under municipal stormwater NPDES permits will, collectively, fund and conduct the remaining elements of the regional small stream status-and-trends monitoring program (most of the watershed-scale sampling) as part of their overall mandate. The financial contribution and/or level of effort required of each permittee will be based on equitable factors, and permittees will be allowed flexibility to either pay into a collective fund or conduct the monitoring themselves.
27. The SWG will coordinate with the Partnership, Puget Sound Salmon Recovery Council, and others to seek additional funding and in-kind contributions for this proposed monitoring and assessment.

Scientific Framework for Nearshore Area Status-and-Trends Monitoring

28. Experimental design for nearshore areas:
    b. Probabilistic sampling of randomly selected stratified sites to assess biological and chemical status and trends over time.
    c. Approach is compatible with Washington Department of Health (WDOH) protocols for fecal coliform monitoring.
    d. Approach is compatible with NOAA's national Mussel Watch protocols for bioaccumulation toxicity.
    e. Approach is compatible with PSAMP protocols for sediment chemistry and other nearshore monitoring.

30. Identification of nearshore sites:
    a. Continue bioaccumulation toxicity monitoring at existing ambient Mussel Watch sites.
    b. Randomly select 30 new sites for conducting annual bioaccumulation toxicity monitoring near stormwater outfalls to Puget Sound.
    c. Continue to conduct PSAMP sediment chemistry and other monitoring at nearshore sites.
    d. Conduct sediment chemistry monitoring at 30 randomly selected depositional locations in Puget Sound. Evaluate, statistically and logistically, whether these can be aligned with the Mussel Watch sites.

Proposed Addition: evaluate whether a stratified design would be more appropriate and is sampling can be conducted at a longer time scale.

    e. Focus on areas of the marine nearshore environment that meet Mussel Watch and PSAMP sediment monitoring criteria but are more directly (but not exclusively) affected by stormwater.
    f. Randomly select 50 sites for fecal coliform monitoring at the Puget Sound regional scale, utilizing WDOH, tribal, or other shellfish monitoring data in areas of overlap.

31. Nearshore monitoring frequency:
    a. Monthly fecal coliform sampling,
    b. Annual bioaccumulation toxicity monitoring, and
    c. Annual sediment chemistry monitoring.

Proposed addition: incorporate data sets where fecal coliform sampling is more frequent than per month to evaluate how well the proposed frequency describes the temporal aspects of fecal coliform bacteria.

Implementation Plan for Nearshore Area Status-and-Trends Monitoring

32. Local governments in Puget Sound covered under municipal stormwater NPDES permits will, collectively, conduct the following elements of the regional program as part of their overall mandate. The financial contribution and/or level of effort required of each permittee is based on equitable factors and permittees are allowed flexibility to either pay into a collective fund or conduct the monitoring themselves.
    a. Monthly fecal coliform monitoring at 50 sites,
    b. Annual bioaccumulation toxicity (Mussel Watch) monitoring at 30 sites, and
    c. Annual nearshore sediment chemistry monitoring at 30 sites.
33. Local governments will coordinate with salmon recovery efforts, Puget Sound clean-up efforts, local Departments of Health, the Puget Sound Nearshore Restoration Partnership (PSNRP), and other existing nearshore monitoring efforts.

Topic: Source Identification and Diagnostic Monitoring

Lead: Mindy Fohn

See proposed changes to key recommendations in the attached document. They address the following:

1. Prioritization of problems by WRIA

   Summary: Prioritization of problems by WRIA is not compatible with the municipal NPDES permit. The permits are not watershed based. Also, the current recommendation is problematic because not all jurisdictions may participate at the same level of commitment. Each jurisdiction should prioritize problems.

   Recommendation: Reconsider the reality of WRIA-based prioritization using existing data. How can this be achieved? This will require coordination and a similar level of commitment to clean up problem areas from all partners. Also, a big gap is the disparity of data available in each region. The SWG could recommend permit-required minimum receiving water monitoring so that data can

   a) be used by the jurisdiction for prioritizing and serve as an "early warning system" for source ID

   b) rollup at the WRIA level and c) provide a regional picture of stormwater impacts. The minimum data could be critical stream indicators (BIBI, flow, and WQI) and nearshore indicators (estuary sediment testing, mussel watch, Fecal coliform).

2. Linking Source ID to Status and Trends, ambient monitoring

   Summary: The link with S&T to Source ID is problematic because it is a probabilistic design. Monitoring should target where stormwater influences receiving waters. S&T will miss many smaller jurisdictions and not provide information for Source ID. There may be better ways, such as in-line sediment monitoring, to find source problem areas.

   Recommendation: The link is problematic. However, if all jurisdictions were required to perform receiving water monitoring, then they would have data for their own program priorities.

3. Source ID on the Regional Scale and the Local Scale
   Summary: Replicating successful programs is good and there needs to be more clarity on what's local and what's regional.
   Recommendation: Add a recommendation for the creation of a regional entity to develop protocols, produce guidance documents, reports, and conferences focused on source control programs. This may be a good use of Pay-in funds.

4. Monitoring should include counting management activities
   Summary: Assessment of source control activities and results can inform the benefits of stormwater management actions locally and regionally.
   Recommendation: Create a regional source control panel of the best programs (munis) and secure funding (from pay in option?) to regionalize methods to count actions, sources removed, and beneficial uses regained. Some methods could be tons of solids removed, gallons of spills cleaned up, number of businesses implementing secondary containment, number of spill kits restocked.

5. Source ID relationship to IDDE and TMDLs
   Summary: There is confusion regarding the role of TMDLs.
   Recommendation: Include an emphasis on category 4b in the document and recommendations.

6. Funding Source ID: Jurisdiction funding vs. Pay-in option
   Summary: there should be more emphasis on Source ID either in the permit or the pay-in option
   Recommendation: Place more emphasis on Source ID in the permits and omit S&T from the permit.

7. How to link with the permit
   Summary: The idea of linking receiving water data with upland management actions is logical and favorable. The confusion and lack of clarity result from the vagueness of this chapter. The framework is clear if there is receiving monitoring data for all WRIAs or permittees and then each prioritizes. This monitoring could replace land use based outfall monitoring and BMP monitoring in S8.
   Recommendation: Clarify that IDDE is a TOOL for source ID when a receiving water problem is detected.

Topic: Effectiveness Studies

Lead: Heather Kibbey

1. Process to identify and prioritize effectiveness studies not defined. Beef up implementation section-this is where initial efforts should go, not S&T-disappointed in progress to date. Consider P1 program, and what can get accomplished by Oct. Process for submitted proposals, guidance and criteria needed.
   New Key Recommendation: A subgroup will convene to further develop the effectiveness studies component during the summer.
   Examples of their work include:
   examination of Phase 1 effectiveness programs;
   further define process and criteria to select effectiveness studies; and
   make recommendations for Oct 2010 deadline.

The subgroup will also continue to work on other effectiveness issues, such as development of study designs.

a. Current Effectiveness requirements in P1 permit acceptable, no need to replace with proposal from SWG Impossible to evaluate impact of practices in 1 permit term, do not tie to permit term
Change Key Recommendation 53f: Eliminate reference to preference for projects that generate results within X years.
Discussion: Should effectiveness be the first monitoring program started (as opposed to S&T or Source ID)? Do we have enough information to make this decision now?

b. Criteria for selecting effectiveness studies—p. 71. c. confusing-should state that all prioritized topics for effectiveness studies are covered. d. should expanded to include protecting beneficial uses, not just restoration. e. is narrow, only for NPDES, will need to rewrite whole section when agricultural and industrial issues addressed, so broaden this out. Add criteria of transferability. Who defines important threats or impacts? Let permittees do it?
No action now—continue in subgroup

c. Concern with caucus-based process determining direction of permit program.
No action now – continue to refine criteria for selection in subgroup

d. Comments on Topics: Retrofit good focus area, done at all scales. Non-structural BMPS (education and outreach, maintenance optimization, business inspection effectiveness) should be emphasized, and prioritized on a regional scale. Non-structural should be priority for effectiveness research. Low benefit of testing BMPs under SWG—already passed by ECY. Agriculture and forestry impacts important, but should not be addressed here.
No action now—continue in subgroup. Recommend not revisiting earlier discussion and decision on Ag/Forestry.

e. Provide examples of programmatic approaches and NPDES provisions that might be monitored
Action: Do not bulk up the key recommendation with additional description, but in the Scientific framework (1.2.3, #3), add examples for operational (such as catch basin cleaning frequency), behavior change (such as using educational techniques to get more people to pick up dog waste), planning (?), and programmatic(such as success of business inspection programs)

2. Identify feedback loops for management decisions. Agree with effectiveness as part of adaptive management, but if S&T random and not tied to problems, how is connection possible?
Action: Which subgroup would work on better identifying feedback loops? Assign to a group
Discuss relative to S&T decisions: do we still need a better description of how monitoring ties together?

3. Cost estimates too low—double them.
No action now: continue in subgroup

4. A timeline for all proposed actions should be included
Action: Develop timeline for all proposed actions (now or after October?)

5. Need national program for BMP effectiveness
New Key Recommendation: Ecology should participate in a national forum for BMP effectiveness determinations.